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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/517,750	06/10/2005	Wolfgang Clemens	411000-122	6074

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EXAMINER

HO, HOANG QUAN TRAN

ART UNIT	PAPER NUMBER
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2818

MAIL DATE	DELIVERY MODE
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03/19/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/517,750	Applicant(s) CLEMENS ET AL.	
	Examiner Hoang-Quan T. Ho	Art Unit 2818	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 December 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2,4-7 and 9 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2,4-7 and 9 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on December 17, 2008 has been entered.

Response to Amendment

Applicant's amendment to the claims, filed on December 17, 2008, is acknowledged. Entry of amendment is accepted and made of record. Currently, claims 1 – 2, 4 – 7 and 9 are pending in light of the amendment, in which: claims 1, 5 and 7 were amended; claims 3 and 8 were cancelled; no claim was withdrawn; and no claim was added.

Applicant's amendment to the specification, filed December 17, 2008, is acknowledged. Entry of amendment is denied and not made of record. See specification and §112 rejection sections below.

Response to Arguments/Remarks

Applicant's arguments filed on December 17, 2008 is acknowledged and is answered as follows.

The declaration under 37 CFR 1.132 filed December 17, 2008 is insufficient to overcome the rejection of claims 1 – 2, 4 – 7 and 9 based upon applied prior arts as set forth in the last Office action in view of the following reasons.

The declaration may provide support for patentability, but the declaration does not support for the amendment of the claims regarding the improvement of electrical on/off properties. Furthermore, the declaration discusses the on/off feature, but the statements are not upheld by evidence(s). The declaration stated tests were conducted, but applicant failed to supply any supporting data from said tests. In view of MPEP § 2163.07(a):

“To establish inherency, the extrinsic evidence must make clear that the missing descriptive matter is necessarily present in the thing described in the reference, and that it would be so recognized by persons of ordinary skill. Inherency, however, may not be established by probabilities or possibilities. The mere fact that a certain thing may result from a given set of circumstances is not sufficient.” In re Robertson, 169 F.3d 743, 745, 49 USPQ2d 1949, 1950-51 (Fed. Cir. 1999) (citations omitted).

The attachment to declaration is suggested to be filed as an information disclosure statement (IDS), if such prior arts/references have not been filed before. The listing of references in the declaration is not a proper information disclosure statement. 37 CFR 1.98(b) requires a list of all patents, publications, or other information submitted for consideration by the Office (also see MPEP § 609.04(a)). Therefore, unless the

Art Unit: 2818

references have been cited by the examiner on form PTO-892, they have not been considered.

Specification

The amendment filed December 17, 2008 is objected to under 35 U.S.C. 132(a) because it introduces new matter into the disclosure. 35 U.S.C. 132(a) states that no amendment shall introduce new matter into the disclosure of the invention. The added material which is not supported by the original disclosure is as follows: "In addition, the biaxially stretching can be shown to improve the ON/OFF ratio of the transistor."

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1 – 2, 4 – 7 and 9 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Claim 1 recites the limitation "improve the electrical on/off properties", claim 5 recites the limitation "improving the electrical on/off operating properties" and "the electrical on/off operating properties being improved", and claim 7 recites the limitation

Art Unit: 2818

“improved electrical on/off operating properties”. These newly added limitations are considered new matter. Claims 2, 4, 6, and 9 depend from any of claims 1, 5 and 7.

As aforementioned, the declaration filed does not support adding the enhanced characteristics of the device to the disclosure without violating the prohibition of new matter. Applicant did not file supporting and persuasive evidence(s) why such amendments are to not be considered new matter.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 1 – 2, 4 – 7 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bao et al. (High-Performance Plastic Transistors Fabricated by Printing Techniques), hereinafter as Bao, further in view of Carey et al. (U.S. Pat. No.

Art Unit: 2818

5,817,550), hereinafter as Carey, and further in view of Shi et al. (U.S. Pat. No. 6,326,640 B1), hereinafter as Shi.

Regarding claim 1, fig. 1 of Bao teaches in an electronic organic component, the combination comprising:

a substrate of the electronic organic component (“polyester substrate” layer as seen in fig. 1); and

an organic semiconductor functional layer (“organic semiconductor” layer as seen in fig. 1) coated on the substrate (the organic semiconductor layer is coated, i.e., provided on the polyester substrate, as seen in fig. 1; see note 2 below);

wherein said substrate comprises a biaxially stretched (well-ordered) plastic film (pg. 1299, right column, first sentence of last paragraph; see Note 1 below) such that the orderliness of the plastic film forms the applied functional layer into a well-ordered layer to thereby increase the charge carrier mobility of the coated organic functional layer (pg. 1300, right column, lines 11 – 31).

Note 1: Bao teaches that the polyester substrate, specifically polyethylene terephthalate is commonly used as a substrate for large area displays at pg. 1299, right column, first sentence of last paragraph. However, Bao may not explicitly disclose the commonly used substrate, that such polyester substrate is a biaxially stretched, well-ordered, plastic film. Carey teaches that it is known in the art to provide such polyester substrate as a biaxially stretched, well-ordered, plastic film (col. 3, lines 36 – 31) that are commonly used as a substrate for large area displays (col. 2, lines 28 – 31). It would

Art Unit: 2818

have been obvious to one having ordinary skill in the art at the time the invention was made to provide the invention of Bao with the specifics of the polyester substrate of Carey that is commonly used for large area displays, in order to provide excellent optical quality and low cost (col. 3, lines 36 – 41). It is proper to combine Bao and Carey because they both teach analogous art relating to thin film transistor (TFT) on a plastic substrate.

Note 2: Bao may not explicitly teach that the organic semiconductor is coated on the substrate (i.e., physically touching). However, fig. 6 of Shi teaches that it is known in the art to provide:

a substrate of the electronic organic component (ref. no. 63); and

an organic semiconductor functional layer (ref. no. 64) coated on the substrate (as seen in fig. 6).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide the invention of Bao with the TFT layout design of Shi, in order to provide alternative TFT layout which enhances carrier mobility between the source and drain electrodes (col. 2, lines 25 – 30; col. 3, lines 5 – 15; col. 3, line 62 – col. 4, line 5). It is proper to combine Bao and Shi because they both teach analogous art relating to organic TFT.

Regarding claim 2, Bao, Carey and Shi teaches a substrate as defined in claim 1, Carey teaches wherein the plastic film is at least partially crystalline (col. 3, lines 36 – 41).

Regarding claim 4, Bao, Carey and Shi teaches a substrate as defined in claims 1 or 2, Carey teaches wherein the plastic film is selected from any one of the group consisting of isotactic polypropylene, polyamide, polyethylene, or polyethylene terephthalate (col. 3, lines 36 – 41).

Regarding claim 5, pg. 1300, right column, lines 11 – 31 and fig. 1 of Bao teaches a method of increasing the charge carrier mobility of a semiconducting layer of organic material (“organic semiconductor” layer as seen in fig. 1),

wherein the semiconducting layer is formed on and contiguous (see note 2 below) with an underlayer (“polyester substrate” layer as seen in fig. 1) comprising an oriented, biaxially stretched (well-ordered) plastic film (pg. 1299, right column, first sentence of last paragraph; see Note 1 below).

Note 1: Bao teaches that the polyester substrate, specifically polyethylene terephthalate is commonly used as a substrate for large area displays at pg. 1299, right column, first sentence of last paragraph. However, Bao may not explicitly disclose the commonly used substrate, that such polyester substrate is a biaxially stretched, well-ordered, plastic film. Carey teaches that it is known in the art to provide such polyester substrate as a biaxially stretched, well-ordered, plastic film (col. 3, lines 36 – 31) that are commonly used as a substrate for large area displays (col. 2, lines 28 – 31). It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide the invention of Bao with the specifics of the polyester substrate of

Art Unit: 2818

Carey that is commonly used for large area displays, in order to provide excellent optical quality and low cost (col. 3, lines 36 – 41). It is proper to combine Bao and Carey because they both teach analogous art relating to thin film transistor (TFT) on a plastic substrate.

Note 2: Bao may not explicitly teach that the semiconducting layer is formed on and contiguous with an underlayer. However, fig. 6 of Shi teaches that it is known in the art to provide:

an underlayer (ref. no. 63); and

a semiconducting layer of organic material (ref. no. 64) is formed on and contiguous with the underlayer (as seen in fig. 6).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide the invention of Bao with the TFT layout design of Shi, in order to provide alternative TFT layout which enhances carrier mobility between the source and drain electrodes (col. 2, lines 25 – 30; col. 3, lines 5 – 15; col. 3, line 62 – col. 4, line 5). It is proper to combine Bao and Shi because they both teach analogous art relating to organic TFT.

Regarding claim 6, Bao, Carey and Shi teaches the component of any one of claims 1 or 2, fig. 1 of Bao teaches wherein the component further comprises an organic field effect transistor (OFET) (pg. 1299, left column, first paragraph) comprising the substrate or underlayer (as seen in fig. 1) and the semiconductor layer coated on the

Art Unit: 2818

substrate or underlayer (the organic semiconductor layer is coated, i.e., provided on the polyester substrate, as seen in fig. 1).

Regarding claim 7, fig. 1 of Bao teaches an organic field effect transistor (OFET) (pg. 1299, left column, first paragraph) comprising:

a substrate ("polyester substrate" layer as seen in fig. 1) which comprises a biaxially stretched (well-ordered plastic film) (pg. 1299, right column, first sentence of last paragraph; see Note 1 below); and

above and on that substrate contiguous therewith (see note 2 below) is a semiconducting layer of organic material ("organic semiconductor" layer, i.e., provided above and on the polyester substrate, as seen in fig. 1),

the semiconductor layer exhibiting a charge carrier mobility of $\mu > 10^{-3} \text{ cm}^2/\text{Vs}$ (pg. 1300, right column, lines 11 – 31).

Note 1: Bao teaches that the polyester substrate, specifically polyethylene terephthalate is commonly used as a substrate for large area displays at pg. 1299, right column, first sentence of last paragraph. However, Bao may not explicitly disclose the commonly used substrate, that such polyester substrate is a biaxially stretched, well-ordered, plastic film. Carey teaches that it is known in the art to provide such polyester substrate as a biaxially stretched, well-ordered, plastic film (col. 3, lines 36 – 31) that are commonly used as a substrate for large area displays (col. 2, lines 28 – 31). It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide the invention of Bao with the specifics of the polyester substrate of

Art Unit: 2818

Carey that is commonly used for large area displays, in order to provide excellent optical quality and low cost (col. 3, lines 36 – 41). It is proper to combine Bao and Carey because they both teach analogous art relating to thin film transistor (TFT) on a plastic substrate.

Note 2: Bao may not explicitly teach that above and on that substrate contiguous therewith is a semiconducting layer of organic material. However, fig. 6 of Shi teaches that it is known in the art to provide:

a substrate (ref. no. 63); and

above and on that substrate contiguous therewith (as seen in fig. 6) is a semiconducting layer of organic material (ref. no. 64).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide the invention of Bao with the TFT layout design of Shi, in order to provide alternative TFT layout which enhances carrier mobility between the source and drain electrodes (col. 2, lines 25 – 30; col. 3, lines 5 – 15; col. 3, line 62 – col. 4, line 5). It is proper to combine Bao and Shi because they both teach analogous art relating to organic TFT.

Regarding claim 9, fig. 1 of Bao teaches an organic field effect transistor (OFET) (pg. 1299, left column, first paragraph) comprising a substrate (“polyester substrate” layer as seen in fig. 1) and a semiconducting layer (“organic semiconductor” layer as seen in fig. 1) on and contiguous (see note 1 below) with the substrate (the organic

Art Unit: 2818

semiconductor layer is provided on the polyester substrate, as seen in fig. 1) according to claim 4.

Note 1: Bao may not explicitly teach that a semiconducting layer on and contiguous with the substrate. However, fig. 6 of Shi teaches that it is known in the art to provide:

a substrate (ref. no. 63); and

a semiconducting layer (ref. no. 64) on and contiguous with the substrate (as seen in fig. 6).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide the invention of Bao with the TFT layout design of Shi, in order to provide alternative TFT layout which enhances carrier mobility between the source and drain electrodes (col. 2, lines 25 – 30; col. 3, lines 5 – 15; col. 3, line 62 – col. 4, line 5). It is proper to combine Bao and Shi because they both teach analogous art relating to organic TFT.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hoang-Quan Ho whose telephone number is 571-272-8711. The examiner can normally be reached on Monday - Friday, 9 AM - 5 PM, EST.

Art Unit: 2818

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steven Loke can be reached on 571-272-1657. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Hoang-Quan T Ho/
Examiner, Art Unit 2818
March 16, 2009

/Andy Huynh/
Primary Examiner, Art Unit 2818